

# The Story of the Panama Canal-By the Man Who Built It.

COL. GEORGE W. GOETHALS.  
Builder of the Panama Canal.

(Editor's Note—This is the second part of Col. Goethals' own story of the Panama Canal, which he built, and it tells of the wonderful work of preparations and of the great obstacles that were to be overcome. Two years were spent in the work of preparation alone, in building a plant and getting together the force and the machinery. And now for the first time, the real story of those disastrous slides and breaks is told, those tremendous upheavals of nature which increased the burden placed upon the shoulders of the great directing genius but which never caused him to waver from his purpose to finish the work in the time that was set for him to finish it. There has been no greater exhibition of endurance and sheer nerve in the history of the world than this calm, able man has given, fighting the forces of nature, directing his tremendous army of more than fifty thousand souls and pushing through every obstacle to great achievement.)

PART II.  
BY COL. GEORGE W. GOETHALS.  
Corps of Engineers, United States Army, Chairman and Chief Engineer, Isthmian Canal Commission.

(Copyrighted, 1913, by the Newspaper Enterprise Association in the United States, Great Britain, France and Germany.)

The first two and a half years of American control in the canal zone were given to preparation. All energies were devoted during that time to rid the isthmus of disease by sanitation, to recruiting and organizing a working force, and providing for its suitable houses, hotels, messes, kitchens, and an adequate food supply; to assembling the plant to do the work; to increasing the capacity of the existing railway system, and to establishing a system of civil government for the canal zone, which is a strip of land 19 miles wide, five miles in extent, and the center of the canal, extending across the isthmus.

The work of sanitation included clearing lands, draining and filling pools and swamps for the extermination of the mosquito, the establishment of hospitals for the care of the sick and injured, and the quarantine. In addition, to secure and maintain better health conditions, municipal improvements were undertaken in the cities of Colon and Panama and the various settlements along the line of the canal, such as the construction of reservoirs, with means for filtering and furnishing wholesome and sufficient quantities of water.

Buildings to the number of 2,009 were constructed, including office buildings, hospitals, hotels, messes, kitchens, shops, storehouses and living quarters. In addition to this, 1,536 buildings out of a total of 2,200 buildings turned over by the French were remodelled and repaired for use.

Recruiting agencies were established in the United States, Europe and the West Indies. The commissary department of the Panama Railroad company was enlarged until it became a great department store, supplying to the employees whatever was necessary for their comfort and convenience. Manufacturing, cold storage and laundry plants were

established and turned out each day about 90 tons of ice, 14,000 loaves of bread, 2,400 rolls, 250 gallons of ice cream, 1,000 pounds of roasted coffee and 7,500 pieces of laundry. Four to five refrigerator cars, loaded with meats, vegetables and such fruits as could be obtained, were sent out on the night freight to distant points, and every morning a supply train of about 16 cars, of which number six to eight were refrigerator cars, left Cristobal at 4:30 to distribute food-stuffs and laundry to the local commissaries along the line, where employees could make their purchases and where the hotels, messes and kitchens secured their supplies for the day.

The construction plant, consisting of steam shovels, locomotives, cars, unloaders, spreaders, track-shifters, pile-drivers, cranes, dredges, steamboats, tugs and barges, was purchased for the most part "knocked down," and the shops for their erection and repair were constructed and enlarged. Some of the machinery was built from parts manufactured in the shops. The distance, from the home market, to the site of the canal, and the necessity for keeping the construction plant in the most efficient condition for economical operation, made it imperative that the shops be equipped to make every possible contingency.

The capacity of the Panama Railroad was increased by double tracking it throughout, except from Cristobal to Gatun and from Culebra to Paraiso. Yards were enlarged and connections made to areas available for dumping grounds.

Laws were framed, and civil government was established with its necessary adjuncts of courts, police force, fire companies, customs and revenue service, postoffices, public works and treasury.

A purchasing department was organized in the United States for the obtaining of supplies of all kinds and descriptions. Upon arrival on the isthmus, the supplies were shipped to the various sub-divisions of the canal work, which they were purchased or they were placed in storehouses along the line for issue when required.

It was only after these various, yet necessary, adjuncts had been provided and the forces for their operation were organized that the principal work in hand, the building of the canal, could be pushed forward with any hope of success. As much praise cannot be given to those who conceived and established them in a working condition. The department of engineering and construction was divided into three construction divisions. The Atlantic division embraced the engineering construction from deep water in the Caribbean sea to include the Gatun locks and dam. The Central division was from Gatun to Pedro Miguel and the Pacific division from Pedro Miguel to deep water in the Pacific ocean.

As already noted, the Americans continued the work in progress by the French in the cut commonly known as the Culebra cut, utilizing the French machinery until it could be replaced by more modern appliances.

Some idea of the magnitude of the operations may be formed from the fact that this division had within its jurisdiction over 200 miles of five-foot gauge track laid, about 55 miles of which were within the side slopes of the Culebra cut alone.

GEO. W. GOETHALS.

The third and concluding chapter of Col. Goethals' story will be printed in this newspaper tomorrow.

mits they could work a number of excavators simultaneously at several points, so that a succession of benches or ledges resulted, lying one above the other, each with the natural surface at the point of beginning. By working in the direction of the length of the cut, the face of the bank gave the longest cutting possible, reducing the number of times the excavator must be hauled back, and secured a satisfactory drainage arrangement, since the cutting was carried up grade on either side of the summit.

The Americans followed the same method, the only difference being in the character of machinery used. The greatest difficulty encountered in the excavation was due to slides and breaks which caused large masses of material to slide or move into the excavated area, closing off the drainage, upsetting steam shovels and tearing up the tracks.

The term "slide" is applied to the movement of the overlying clay upon smooth, sloping surfaces of rock or other material harder than clay.

"Breaks" occur at points where the underlying rock of poor quality, intersected by vertical seams or seams sloping toward the canal, and which is unable to bear up the superimposed mass. Generally the upper surface of the broken portion of the bank remains approximately horizontal, settling nearly vertically. The weight of the broken portion forces up and displaces laterally the material lying directly below it in the bank, and the breaks or edges of the canal. As the material thus forced up is taken away the upper part gradually settles and moves toward the axis of the canal until the entire broken portion is removed.

The greatest slide was at Cucaracha and gave trouble when the French began cutting in 1884. Though at first confined to a least of one-half mile along the line of excavation, the slide extended to include the entire basin south of Gold Hill. This slide was the last obstruction to the canal and its removal was the final step in finally making the canal an accomplished fact.

There were, all told, nine slides and breaks to be reckoned with, and there was nothing to do but remove all the material which the slides and breaks had piled up. There is no other method known to stop or prevent them. No apprehension was felt because of the slides in the future of the canal. They developed as the depth of the cut increased and the banks slid or broke because of the condition of unstable equilibrium. When the grade was reached, equilibrium was established and the back pressure of the water results in greater stability.

Work has been in progress in the Culebra cut since 1880, and during the French control 18,446,000 cubic yards were removed. The Central division of the Culebra cut, the French excavation which was useful to the present project amounted to 3,201,000 cubic yards, a total of the Central division of over 26,000,000 cubic yards.

Some idea of the magnitude of the operations may be formed from the fact that this division had within its jurisdiction over 200 miles of five-foot gauge track laid, about 55 miles of which were within the side slopes of the Culebra cut alone.

GEO. W. GOETHALS.

The third and concluding chapter of Col. Goethals' story will be printed in this newspaper tomorrow.

HAD CATARRH OF THE STOMACH.

Peruna Relieved a Serious Case.

Mr. A. M. Ikerd, Box 31, West Burlington, Iowa, writes: "I had catarrh of the stomach and small intestines for a number of years. I went to a number of doctors and got no relief, and finally one of my doctors sent me to Chicago, and I met the same fate. They said they could do nothing for me; said I had cancer of the stomach. I was in a bad way, and I thought I was going to die. I bought a bottle of Peruna, and I kept a bottle of it in my house all the time."

It is a remarkable story that Mr. Ikerd tells. It is a true story, but very briefly told. If he put into his story all of the details it would make a chapter of suspense and agony, hope and final recovery, equal to the wildest fiction. Any one wishing to do so can write Mr. Ikerd and describe to him whether there has been any exaggeration in his case.

The "Hills of Life" will be sent free by addressing the Peruna Co., Columbus, Ohio.

Those who object to liquid medicines can now procure Peruna Tablets.

"But what got me most," he puzzled, "is how those Indians could stand it with all their tight buckskin leggings and blankets in that hot Coliseum. Why, Mrs. Huey and me 'most suffocated!'"

William Knoblock recently returned from Indianapolis, where he says he was very much interested in the squirrels running around near the business district. Which reminds us of the great number of squirrels in Ann Arbor. They scurried about on the sidewalks among the foot-crowds as tame as a lot of fox terriers. At one place a student was snatching a peanut by a string from a second story, and a squirrel on the ground was trying to grab it. Just as the little animal got near enough to make a nab, the peanut was jerked away, and after a few vain attempts to capture the prize, the squirrel abandoned the task and went away, bristling with indignation and cussing something shameful.

Melvin Huey attended the land show in Chicago and returned full of the wonders of the exhibition. There were peewees, he said, the like of which he never seen before—although he had been to California several times, and down south, and all through Michigan.

## OUR FELLER CITIZENS

By HI SIBLEY

Tourists' Day. Harry Schadt, who visits Arkansas and Louisiana every now and then and sometimes offered for the Fulton-Powell Lumber Co., tells of his experiences.

On one of his trips he arrived about the same time as all the water in the Mississippi valley did, and practically all of the territory he visited was submerged under several feet of water. Recruits of course, were out of commission, and the only means of transportation was by boat. "At one place," Harry says, "there was nothing but water as far as we could see. In fact there wasn't enough land above the surface to plant a bean on."

On another trip he was shown the trail blazed through the cane break for Roosevelt when he was hunting two years ago. The trail was described as a "one line with the dust hardly settled yet." During this hunting expedition a negro by the name of Alec was assigned to personal service for the Colonel, and he performed his duties in such a satisfactory way that when the Colonel departed he presented Alec with two bright new ten dollar gold pieces, to show his appreciation.

Needless to say, Alec was well liked over with this unprecedented prosperity. Never before in his life had he possessed more than two dollars at a time, and twenty dollars to him was fabulous wealth. He decided to keep one of the gold pieces, member Roosevelt by, and spend the other. It took him about an hour and a half to spend the ten. Having had a taste of affluence, it was pretty hard for him to grub along in the old way, and he began to hanker to spend

more money, still determined to keep the other ten. Finally, he couldn't stand it any more, so he went to Congressman Martin Hamlin, and said: "Mishah Hamlin, ah wants to borrow eight dollars." Hamlin regarded him with amazement and said "Why Alec, eight dollars is an awful pile of money—I couldn't let you have that much. You'd have to have security for that amount. You couldn't raise it."

"I've got security all right—I've got good security," Alec replied, and Hamlin, amused, said "All right, Alec, you got your security and if it's good I'll let you have the money."

Alec went away and returned a short time after with his "security"—the remaining ten dollar gold piece Roosevelt had given him. He got the eight dollars.

Some years ago—during Cleveland's administration to be more exact—Adolph Ginz and Chas. Goetz made a trip to Washington. While sight-seeing one day a sudden rain-storm came up and Ginz stepped into a nearby store and bought a dollar umbrella. A short time afterward, Ginz and Goetz became separated, the umbrella going with Ginz. Now it seems that a dollar umbrella—like a seven dollar suit—looks first rate in a show window, but it doesn't stand the racket very well in active service. Ginz was out in the pouring rain a good part of the afternoon, and after the umbrella got soaked the water began to drip through and as it dripped through, it carried most of the fast black in the fabric with it. In the course of time Ginz's hat and collar and his complexion had assumed an old-rubber hue.

He got back to the hotel without suspecting any great change in his appearance and encountering Goetz, said "Well, where've you been all afternoon, Charley?" Goetz surveyed him with a curious expression and backed off before Ginz had a chance to finish the sentence. He didn't recognize the mulatto and what is more, wasn't particularly desirous of conversing with him. Ginz accosted Goetz a second time, and this time it dawned upon Goetz that the olive skinned stranger was Ginz, whereupon Goetz began to laugh so loud and so long that Ginz lost interest in sight-seeing for the rest of his stay.

## EVERY HOME NEEDS A HEALING SALVE

None is More Reliable Than Resinol. The same soothing, healing, antiseptic medication which makes Resinol Ointment so successful for eczema and other skin eruptions, also makes it the ideal household remedy for a score of troubles that constantly arise in every home. It quickly heals burns, scalds and wounds; is an excellent dressing for ulcers, cuts, boils, and stubborn sores; stops itching at once; gives prompt and permanent relief from many forms of piles, and is invaluable for many minor skin troubles such as colds, dandruff, pimples and chafes. Resinol Ointment positively contains nothing of a harsh or injurious nature. It is absolutely pure and so gentle, yet effective, that it can be used freely on the most inflamed surface or the tenderest skin, even of a tiny baby. Doctors have prescribed it for the past eighteen years. For trial free, write to Dept. 35-R, Resinol, Baltimore, Md. Every drugstore sells Resinol Ointment (50c and \$1.00). Be sure you get the genuine and not something that merely looks or smells like Resinol.



She Sits While Working

Reaches Instead of Walking

Through Early—Not Tired

## You May Delay Too Long!

21 have joined the Hoosier Club within two days. 29 only now can enroll and have their cabinets delivered immediately.

\$1.00

Only 1 Membership Weekly Dues

A single \$1.00 pays all, as this club is under the strict supervision of the Hoosier Company which limits membership.

And any one is yours for \$1.00 if you call on us right away.

## Don't Forget the Time Saving

No matter how pleasant the Hoosier makes your kitchen though, you don't want to spend your life in it. There are more agreeable things to do.

And while making working conditions comfortable and easy, the Hoosier also saves much time.

These women each received the cabinet within a few hours of the time they joined the club. We delivered it at once and set it up all ready to use. Their delight can be appreciated only by a Hoosier owner.

Each paid merely \$1.00 (the Hoosier Club membership fee that is part of the price of the cabinet), and weekly dues, of only \$1.00 for merely a few weeks complete the small total bill.

The women who may enjoy these same advantages are so few that we urge you to make up your mind now to be here early tomorrow morning and enroll as one of the lucky Hoosier members.

## Only Complete Cabinet

There isn't a woman living who isn't overjoyed at the comfort and ease of management and working conditions that the Hoosier brings.

Every modern labor-saving machine for the kitchen has been tested by the Hoosier Company to present perfection. It is the only scientifically built kitchen cabinet, and the only one that is complete. Every cabinet shown here is the newest model.

## Don't Disappoint Her This Christmas

Men may have the advantages of the Hoosier Club Plan as well as women.

FREE! HOLIDAY SOUVENIR FOR ALL LITTLE GIRLS ACCOMPANIED BY A GROWN-UP. CALL AND GET ONE.

WHEN HELLER SAYS IT'S OAK, IT'S OAK

HELLER'S

116 So. Michigan Street

FURNITURE RUGS ROCKERS

## REAL ESTATE TRANSFERS

From the Records of the Indiana Title & Loan Co.

Brought forward, \$349,578.50.  
Christian L. Hanseman and wife to John Muhl, lot 24, Furbinger's second addition, \$3,000.  
Don't Publish, \$2.  
Don't Publish, \$2.  
Mary M. Streeter and husband to William H. Stiles, lots 67 and 87 in O. P. and O. L. 4 in New Carlisle, \$500.  
William Ray and wife to James Ray and John Beck, lots 75 and 76, Springbrook addition to Mishawaka, \$300.  
Christ A. Floss and wife to William Ranstead and wife, part lot 73, O. P. North Liberty, \$325.  
Charles W. Clouse and wife to Wilda Damon and Fred Damon, lot 35, D. C. Eggleston's first addition, \$150.  
Don't Publish, \$1.  
Don't Publish, \$1.  
Louis Murphy and wife to Jacob E. Kuntz, part lot 18, Sorin's first addition, \$1,200.  
Total, \$355,059.50.

## COLDS CAUSE HEADACHE AND GRIP.

LAXATIVE BROMO QUININE tablets remove cause. There is only one "BROMO QUININE." It has signature of E. W. GROVE on box. Adv.

## RESOUNDING PRAISES.

From More of the Great Artists As They Come Along.

Chas. Wakenfield Cadman and Richard Czerwinsky—two of the big artists to come here lately—used, with much satisfaction, the Starr Grand Piano. Both were effusive with their praises, while Mr. Cadman, after using the piano with great success, both at the Freed home, on S. Main st., and at the Oliver Opera house, was so enthused that, without solicitation or without having seen either of the Elbel Bros., sent the following note, through Prof. Griffith: Messrs. Elbel Bros.: I want to send you just a word of appreciation of the very fine "Starr" piano I used at my recitals. I use the "Starr" wherever I can get it. This one was attractively voiced well balanced and tonally beautiful. I regard the "Starr" as one of America's finest pianos. It's delicious tone is captivating. Sincerely, Chas. Wakenfield Cadman. Elbel Bros. are quite proud of these endorsements because they are unpurchased and unsolicited. That is quite different from those artists who come here under contract to use a certain make only. In such cases, the factory forwards them a special piano from town to town, paying all expenses for the advertising. Such, for instance, is the case with Pini-Corsi, and Kubelick, and many others.

More Starr pianos have just been added to the equipment of the South Bend Conservatory of Music to meet its growing needs. Adv.

## LOCAL INSTITUTE CHANGES HANDS

Dr. Bartlett, Physician in Charge of United Doctors' Institute, Purchases Same and Will Conduct it Under His Own Name.

Dr. Bartlett, the specialist who for the past two years has been in charge of the United Doctors' South Bend Institute, wishes to announce to his friends and the patrons of the Institute, that he has purchased the South Bend Institute of United Doctors, and will from this time forward conduct it under his own name. To the many present and past patrons of the Institute the Doctor wishes to give every assurance of the same kindly, careful, and courteous attention which it has been his pleasure to accord to all his patients in the past while acting in the capacity of managing and consulting physician for the United Doctors. The unparalleled success achieved by the South Bend Institute of United Doctors in treating and relieving obstinate cases of chronic diseases during the past two years should speak in no uncertain terms of Dr. Bartlett's ability to handle this class of cases. The Doctor is in receipt of many personal letters from grateful patients living in South Bend and elsewhere, which testify as nothing else could to the remarkable results he has obtained in the special diagnosis and treatment of chronic and nervous diseases. In accordance with the custom of his predecessors, the Doctor will continue to give to all callers at his offices free consultation, examination and advice, and under no circumstances will he accept for treatment any case that in his opinion cannot be cured or relieved. It is the Doctor's intention at the present time to continue in the same location as that formerly occupied by the United Doctors on the second floor of the Toepf Building, opposite the Post Office, at which place he may be consulted between the hours of 9 A. M. and 12 M., 2 and 5 P. M., 7 and 8 P. M. and on Sundays from 10 A. M. to 12 M. Adv.

## RIVERVIEW CEMETERY

LOTS FOR THREE GRAVES, \$25. PERPETUAL CARE GUARANTEED. Home Phone, Cemetery, 5873. Bell Phone, Supt. Res., 3323. Dr. D. E. Cummins, Pres. Elmer Crockett, Treas. John G. Barker, Sec. and Supt.

To make dollars go a very long way and provide necessities for large families, visit the Salvation Army Store, 432 E. LaSalle.